

as the specific name *de Fromenteli* is preoccupied in the latter genus, he proposed to substitute the name *Leptophyllia anglica*, Tomes, for *Turbinoseris de Fromenteli*, Duncan. A new species, probably of *Smilitrochus*, from the Gault of Folkestone, and a new *Isastrœa* from Atherfield were described, and notes added on the occurrence in British localities of *Barysmilia tuberosa*, Reuss, *B. Cordieri*, M.-Edw. and Haime, *Pleurosmilia neocomiensis*, E. de From., of a small form of *Astroccenia*, and of *Isastrœa Reussiana*, M.-Edw. and Haime (= *Ulophyllia crispa*, Reuss). The occurrence of *Beaumontia Egertoni*, derived from the Carboniferous Limestone, in the Upper Greensand of Cambridge, was also recorded.

3. "On the Fossil Flora of Sagor in Carniola." By Constantin, Baron von Ettingshausen, F.C.G.S.

The author in this paper gave the principal results of his examination of the fossil flora of Sagor, consisting of 170 genera and 387 species, of which a list was appended. The plants were obtained from 14 different localities, some of the most important species from each of which were mentioned; in one of these localities the flora underlying the brown coal of the district belonged to the uppermost Eocene, whilst the remaining stations were assigned to the lowest stage of the Miocene system. The great diversity of the fossil plants showed that the Tertiary flora of this and other localities must be considered the origin of all the living floras of the globe; for in the fossil-flora of Sagor are found plants representative of forms now found in Australia, North America and Mexico, California, Chili, India and the East Indian islands, Europe, Africa, Norfolk Island, and New Zealand. Examples of all these were cited.

MISCELLANEOUS.

On the Brisingidæ of the Expedition of the 'Talisman.'

By M. EDMOND PERRIER.

THE family Brisingidæ, which I established in 1875 in my revision of the Stellerida, at first contained only the genus *Brisinga*, and appeared to be completely isolated in the class Stellerida. In his fine memoir on *Brisinga coronata* and *endecaenemos*, Ossian Sars approximated these remarkable animals to *Solaster*; but the form of their pedicellariæ demonstrated, on the contrary, very clearly that they must be referred to the Asteriadæ, and from that time I thought that it was advisable to group in the family Brisingidæ all the aberrant Asteriadæ which had only two rows of ambulacral tubes, that is to say *Pedicellaster* and *Labidiaster*. This is also the conclusion to which Dr. Viguier has been led in his 'Anatomie comparée du squelette des Stellérides'*

This conclusion has since been fully confirmed by the study which Dr. Stüder and myself have been able to make of the *Labidiasteres* of the coast of Patagonia: but, further, the genera *Hymenodiscus*,

* Thèse de doctorat, 1879, p. 119.

E. P., and *Brisingaster*, de Loriol, have come to be added to this family, and to show that the diverse forms which it includes were of great interest in connexion with the morphology of the dorsal skeleton of the Stellerida. In fact I have made known one genus, the genus *Hymenodiscus*, in which this skeleton is wanting on the arms, which possess only the ambulacral and adambulacral pieces. To these pieces are added, in *Brisinga*, arcs of calcareous pieces supported by their extremities upon the adambulacral pieces, and which occur only in the region of the anus, which contains the generative apparatus. These arcs are still very little developed in *Brisinga mediterranea*, E. P. There exists only a single one for two pairs of adambulacral pieces in *B. endecacnemus* and *coronata*; there is one for each pair of adambulacral pieces in *B. Edwardsii*, E. P. Lastly in *Labidiaster* and *Brisingaster* there are added to these transverse arcs some longitudinal pieces which complete a calcareous network, closely resembling that which forms the dorsal skeleton of the Stellerida of the genus *Asterias*. Notwithstanding this, by the constitution of their disc and the number of their arms, the typical Brisingidæ remained separated from the Asteriadæ on the one hand, and from the *Pedicellasteres*, their nearest relatives, on the other. The new Brisingidæ collected by the 'Talisman' serve to fill up this gap, and at the same to extend the idea that we must form of the actual type of the *Brisingæ*. These Brisingidæ belong to six forms, which we propose to name *Brisinga robusta*, *B. semi-coronata*, *B. elegans*, *Freyella spinulosa*, *F. serradiata*, and *Coronaster Parfaiti*. It is to be remarked that the form *B. coronata*, collected in abundance by the 'Travailleur' in the Bay of Biscay, proved to be comparatively rare after passing the latitude of Morocco, and was replaced by the new forms which have just been named.

Brisinga robusta is in a manner only an exaggeration of *B. coronata*. It possesses seventeen arms, much swelled in the neighbourhood of their base, and each attaining a length of more than two decimetres. Through its very thick integuments we cannot distinguish the prominent calcareous arcs, furnished with long spines, which are so distinct in *B. coronata*; but the disc and the bases of the arms are none the less bristling with very numerous and very strong spines. This form was captured off the Sahara, at depths of from 882 to 1435 metres. *Brisinga semi-coronata*, from the same regions, has likewise from fifteen to seventeen arms; but its arms are more slender, its disc is furnished with comparatively small spines, and the spines of the arms, which are less numerous and rather short, instead of being isolated on each side as in *B. coronata*, are arranged in a transverse comb on each side. *Brisinga elegans* is distinguished by its very characteristic flattened form, its broad and not very prominent disc all of a piece with the arms, which are slender, comparatively short, and furnished as usual with transverse calcareous arches, but very scantily spinous. The number of arms is nineteen; the colour rose-red. Fifteen individuals were dredged off the Pilonas at a depth of 1435 metres. The three forms just characterized are true *Brisingæ*.

It is advisable, on the other hand, to create a genus *Freyella*

(from Freya, a Scandinavian goddess) for the form which I have named *B. Edwardsii*, and for the new forms *F. spinulosa* and *F. searadiata*. In these forms all the inflated portion of the arms is in fact entirely covered with polygonal plates still arranged in not very regular arches, equal in number to the adambulacral plates in *B. Edwardsii*, of which we possess only one arm, but forming, on the contrary, a regular mosaic in *F. spinulosa* and *F. searadiata*. This last form, obtained from a depth of 4060 metres, is remarkable for the small number of its arms, six only; *F. spinulosa*, on the contrary, has from eleven to fifteen, generally thirteen very long arms; it is of an orange-yellow colour, and when living diffuses a pretty strong alliaceous odour. It is met with from the Cape Verde to the Azores at depths of 2000–4000 metres. The *Freyellæ*, which are remarkable even by the peculiar construction of their skeleton, do not bear large spines like *B. coronata* or *robusta*; their skeletal plates are smooth in *F. Edwardsii*, furnished each with a small prickle in *F. searadiata*, and with a transverse row of small spinules in *F. spinulosa*.

Lastly, the *Coronasteres* in appearance exactly resemble the species of *Asterias* of the group of *A. tenuispina*, and possess, like them, a dorsal skeleton reticulated with large meshes. But their ambulacral tubes are arranged only in two rows, and their spines are enveloped in a sheath which may ascend nearly to the apex and which bears an elegant fringe of pedicellariæ. The arms, which are very easily detached from the disc, as in the *Brisingæ*, are eleven in number. A single specimen was obtained at the Cape Verde Islands at a depth of 250 metres. *Coronaster* forms a term exactly intermediate between *Labidiaster* and *Asterias*, and the latter is thus closely affined to the *Brisingæ*, just as *Freyella searadiata* leads directly from the *Brisingæ* to the *Pedicellasteres* with five and six arms. The *Brisingæ*, while still remaining very remarkable forms and comparatively isolated from the Ophiurans to which they were at first approximated, are thus, by the new discoveries, more and more distinctly united with the Stellerida properly so called. From the point of view of the development of the dorsal skeleton they may be arranged in an ascending series after the following fashion:—*Hymenodiscus Agassizii*, E. P.; *Brisinga mediterranea*, E. P.; *B. elegans*, E. P.; *B. endecacnemos*, Asbjørnsen; *B. coronata*, E. P.; *B. semi-coronata*, E. P.; *B. robusta*, E. P.; *Labidiaster radius*, Lovén; *Brisingaster Robilliardi*, de Loriol; *Pedicellaster typicus*, Lovén; *Coronaster Parfaiti*, E. P.; *Asterias tenuispina*, Lamk. The *Freyellæ* form an aberrant series.—*Comptes Rendus*, August 10, 1885, p. 441.

On a new Species of Land-Tortoise, brought by M. Humblot to the Museum of Natural History. By M. LÉON VAILLANT.

The abundance and remarkable variety of specific types presented by the group of Land-Tortoises in Africa, and especially in the islands situated to the east of that continent, are facts which have long been known, and important memoirs have been published upon this subject, among which it is sufficient to refer to Dr. Günther's